

Title (en)

Process for the preparation of acrylic or methacrylic acid esters

Title (de)

Verfahren zum Herstellen eines Esters der Acrylsäure oder Methacrylsäure

Title (fr)

Procédé de préparation d'esters d'acide acrylique ou méthacrylique

Publication

EP 1215194 B1 20080827 (DE)

Application

EP 01127326 A 20011120

Priority

DE 10062754 A 20001215

Abstract (en)

[origin: EP1215194A2] Production of an ester of (meth)acrylic acid by reaction with an aliphatic alcohol comprises carrying out the reaction in 2-5 series-connected reaction stages, each comprising a catalyst-containing esterification reactor and a distillation column. Production of an ester of (meth)acrylic acid by reaction with an aliphatic alcohol having 1-10 carbon atoms comprises carrying out the reaction in 2-5 series-connected reaction stages in which: (a) each reaction stage comprises a catalyst-containing esterification reactor and a distillation column for separating the liquid product from the reactor, where the overhead product from the column is cooled and condensed and an ester-containing organic phase is separated from the condensate and passed to a distillative product purification stage; (b) a bottoms product from the column in each of the first to penultimate stages, comprising ester, alcohol and acid, is passed to the reactor of the following stage; (c) (meth)acrylic acid and alcohol are passed through the first-stage reactor, in which the pressure is 1.5-10 bar; the liquid product, comprising acid, alcohol, water and 20-100% of the theoretical amount of ester, is expanded in the first-stage column at a pressure at least 1 bar lower than that in the reactor; the overhead vapor is cooled and condensed; and the condensate is passed to a separator to form an organic phase and an alcohol/water phase which is recycled to the column; (d) the bottoms stream from the first stage is passed to the second-stage reactor, in which the pressure is 1.5-10 bar; the liquid product, comprising acid, alcohol, water and ester, is expanded in the second-stage column at a pressure at least 1 bar lower than that in the reactor; the overhead vapor is cooled and condensed; and the condensate is passed to a separator to form an organic phase and an alcohol/water phase which is recycled to the column; and (e) at least part of the bottoms stream from the last stage is passed to the reactor of a preceding stage and ester is withdrawn from the product purification stage.

IPC 8 full level

C07C 67/08 (2006.01); **C07C 69/54** (2006.01)

CPC (source: EP)

C07C 67/08 (2013.01)

Cited by

US9162964B2; KR20140003445A; US2013245309A1; WO2012071158A1; JP2014506235A

Designated contracting state (EPC)

AT BE CH CY DE DK ES FI FR GB GR IE IT LI LU MC NL PT SE TR

DOCDB simple family (publication)

EP 1215194 A2 20020619; EP 1215194 A3 20040107; EP 1215194 B1 20080827; AT E406342 T1 20080915; CN 1224601 C 20051026; CN 1363545 A 20020814; DE 10062754 A1 20020620; DE 50114264 D1 20081009

DOCDB simple family (application)

EP 01127326 A 20011120; AT 01127326 T 20011120; CN 01143838 A 20011214; DE 10062754 A 20001215; DE 50114264 T 20011120